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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,172	07/09/2001	Yukihiro Nakano	210840US0	5400

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 11/06/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/900,172

Applicant(s)

NAKANO ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3-4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 4 recites, “the ionic polymer and the coloring agent are in the form of an aqueous dispersion of water-insoluble polymer particles comprising a pigment or dye and a water-insoluble polymer”. The scope of the claim is confusing because it is not clear how the ionic polymer is also a water-insoluble polymer. How is the polymer both ionic and water-insoluble? Clarification is requested.

(b) Claim 5 recites the limitation "the water-insoluble polymer" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim given that there is no recitation in claim 1, on which claim 5 depends, of a water-insoluble polymer.

(c) Claim 6 recites ink “further comprising at least one of an ionic water-soluble polymer and an ionic polymer emulsion”. The scope of the claim is confusing because it is not clear how the ink “further” comprises at least one of an ionic water-soluble polymer and an ionic polymer emulsion, when claim 1 already requires an ionic polymer. Does the ink contain two ionic polymers? Clarification is requested.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Ma (U.S. 5,271,765).

Ma discloses water-based ink jet ink comprising colorant and cationic polymer neutralized with organic acid including polybasic acid such as oxalic acid and sulfuric acid (col.2, lines 32-33 and 65, col.3, lines 24-40, and col.4, line 18).

In light of the above, it is clear that Ma et al. anticipate the present claims.

5. Claims 1, 3-4, and 6 are rejected under 35 U.S.C. 102(a) as being anticipated by EP 1088863.

EP 1088863 disclose water-based ink comprising pigment, resin encapsulating a colorant wherein the resin is obtained from cationic monomer and is neutralized with polybasic acid such as sulfuric acid, and cationic polymer which is neutralized with acetic acid (page 5, lines 10-21 and 56-57, page 7, lines 1-10, page 9, lines 34-45, and page 10, lines 19-20).

In light of the above, it is clear that EP 1088863 anticipates the present claims.

6. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Shintani et al. (U.S. 4,623,689).

Shintani et al. disclose aqueous ink comprising colored polymer emulsion or solution wherein the polymer is obtained from anionic and/or cationic monomers and pH adjustor including polybasic acid such as sulfuric acid (col.2, lines 44-46, col.2, line 65-col.3, line 17, and col.8, lines 6-10, 13, and 62-68).

In light of the above, it is clear that Shintani et al. anticipate the present claims.

7. Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohta et al. (U.S. 6,211,265).

Ohta et al. disclose water-based ink jet ink comprising colorant, water-soluble cationic polymer and pH adjustor including polybasic acids such as sulfuric acid, succinic acid, and tartaric acid and monovalent acids such as acetic acid and propionic acid. It is disclosed that mixtures of pH adjustors can be used (col.3, line 12, col.4, line 20, col.5, lines 30-31, and col.8, lines 11-12 and 18).

In light of the above, it is clear that Ohta et al. anticipate the present claims.

8. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Parazak (U.S. 6,281,267).

Parazak discloses water-based ink jet comprising polymer obtained from cationic monomer and organic acid including acetic acid, malonic acid, and mixtures thereof (col.3, line 38, col.4, lines 6-11, col.6, lines 46-63, and col.7, lines 60-61).

In light of the above, it is clear that Parazak anticipates the present claims.

9. Claims 1 and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsutsumi et al. (U.S. 5,852,074).

Tsutsumi et al. disclose water-based ink jet ink comprising vinyl polymer aqueous dispersion in which hydrophobic dye is contained and wherein the polymer is neutralized with polybasic acid such as sulfuric acid. The vinyl polymer is obtained from macromer, salt-forming monomer including ionic monomer, and monomer copolymerizable with macromer and salt-forming monomer (col.1, line 65-col.2, line 3, col.2, lines 8-31, and col.8, lines 58-61).

In light of the above, it is clear that Tsutsumi et al. anticipate the present claims.

10. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by EP 909798 or EP 719846.

EP 909798 and EP 719846 each disclose water-based ink jet ink comprising colorant, cationic polymer, and polybasic acid (EP 909798-page 4, lines 56-57, page 5, lines 46-48, and

page 6, lines 16-17 and 44-48 and EP 719846-page 2, line 54, page 5, line 22, page 6, lines 15-16 and 19-24).

In light of the above, it is clear that EP 919798 or EP 719846 each anticipates the present claims.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1088863 or Tsutsumi et al. (U.S. 5,852,074) either of which in view of Prasad (U.S. 5,529,616).

The disclosures with respect to EP 1088863 and Tsutsumi et al. in paragraphs 5 and 9, respectively, are incorporated here by reference.

The difference between EP 1088863 or Tsutsumi et al. and the present claimed invention is the requirement in the claims of specific polybasic acid.

EP 1088863 disclose resin encapsulating colorant wherein the resin is obtained from cationic monomer and is neutralized with polybasic acid such as sulfuric acid while Tsutsumi et al. disclose vinyl polymer aqueous dispersion in which hydrophobic dye is contained and wherein the polymer is neutralized with polybasic acid such as sulfuric acid. However, there is no disclosure in either EP 1088863 or Tsutsumi et al. of specific polybasic acid as presently claimed.

Prasad, which is drawn to ink jet ink, disclose neutralizing polymer obtained from cationic monomer with organic acid such as oxalic acid in order to solubilize polymer into aqueous medium. Prasad also discloses the equivalence and interchangeability of sulfuric acid, as disclosed by EP 1088863 or Tsutsumi et al., with oxalic acid as presently claimed (col.5, lines 8-9, 19-21, and 33-38).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use oxalic acid as the neutralizer in the ink of either EP 1088863 or Tsutsumi et al. in order to solubilize polymer into the aqueous ink medium, and thereby arrive at the claimed invention.

14. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani et al. (U.S. 4,623,689) or Ohta et al. (U.S. 6,211,265) either of which in view of Suzuki et al. (U.S. 6,153,001).

The disclosures with respect to Shintani et al. and Ohta et al. in paragraphs 6 and 7, respectively, are incorporated here by reference.

The difference between Shintani et al. or Ohta et al. and the present claimed invention is the requirement in the claims of specific polybasic acid.

Suzuki et al., which is drawn to ink jet ink, disclose the use of pH adjustor such as oxalic acid and malonic acid. Suzuki et al. also disclose the equivalence and interchangeability of pH adjustor such as sulfuric acid, as disclosed by either Shintani et al. or Ohta et al., with oxalic acid or malonic acid as presently claimed.

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use oxalic acid or malonic acid pH adjustor in the ink of either Shintani et al. or Ohta et al., and thereby arrive at the claimed invention.

15. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani et al. (U.S. 4,623,689) or Tsutsumi et al. (U.S. 5,852,074) either of which in view of Ohta et al. (U.S. 6,211,265).

The disclosures with respect to Shintani et al. and Tsutsumi et al. in paragraphs 6 and 9, respectively, are incorporated here by reference.

The difference between Shintani et al. or Tsutsumi et al. and the present claimed invention is the requirement in the claims of monovalent acid.

Ohta et al., which is drawn to ink jet ink, disclose adjusting the pH of the ink to proper range using monovalent acid such as acetic acid and propionic acid (col.8, lines 11-27).

In light of the motivation for using monovalent acid disclosed by Ohta et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such acid in the ink of either Shintani et al. or Tsutsumi et al. in order to produce ink with proper pH, and thereby arrive at the claimed invention.

16. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani et al. (U.S. 4,623,689) or Tsutsumi et al. (U.S. 5,852,074) either of which in view of either Ohta et al. (U.S. 6,211,265) or EP 719846.

The disclosures with respect to Shintani et al. and Tsutsumi et al. in paragraphs 6 and 9, respectively, are incorporated here by reference.

The difference between Shintani et al. or Tsutsumi et al. and the present claimed invention is the requirement in the claims of additional ionic polymer.

Ohta et al., which is drawn to ink jet ink, disclose use of cationic water-soluble polymer in order to fix colorant onto recording paper and to impart waterfastness to the printed image (col.4, lines 20-27).

Alternatively, EP 719846 discloses the use of ionic polymer in order to improve rub resistance of the printed image (page 6, lines 19-24).

In light of the motivation for using ionic polymer disclosed by either Ohta et al. or EP 719846 as described above, it therefore would have been obvious to one of ordinary skill in the art to use such polymer in the ink of either Shintani et al. or Tsutsumi et al. in order to produce printed image which is waterfast, or alternatively, rub resistant, and thereby arrive at the claimed invention.

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ma et al. (U.S. 6,232,369) disclose ink jet ink comprising cationic polymer neutralized with organic acid such as oxalic acid.

Grezzo Page et al. (U.S. 5,713,993) disclose ink jet ink comprising polymer obtained from cationic monomer and carboxylic acid additive such as oxalic or malonic acid.

Lavery et al. (U.S. 6,319,309) disclose ink jet ink comprising polybasic acid.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Callie E. Shosho
Examiner
Art Unit 1714

CS
November 1, 2002